
Inventory of Surveys on Smoking

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Synopsis

A review of surveys on smoking was undertaken by the Smoking, Tobacco, and Cancer Program of the National Cancer Institute as part of its planning for smoking control interventions. Eighteen surveys collecting smoking data were identified. The key persons associated with the surveys were

interviewed according to a uniform protocol developed to obtain comparable data on the content, timeframe, population sample, methodology, availability of data, and mode of information dissemination of the surveys.

Analysis indicated that the main variations among surveys occurred in the age range of the population sampled, the definition of smoking behavior, and the quantification of cigarettes smoked. Other issues of special interest compared in the surveys included type of cigarette smoked, attempts at smoking cessation, smokeless tobacco use, passive smoking, use of low tar and low nicotine cigarettes, and smoking among special populations (women, youth, Hispanics, and blacks). Two main areas of concern in planning, targeting, and evaluating timely and appropriate smoking behavior interventions are the lag between data collection and publication of survey results and the variability in the content and methodology of the surveys.

IN 1984, A REVIEW OF MAJOR SURVEYS dealing with smoking prevalence was initiated to determine the extent and nature of national data collection on this subject. The need for such a review was recognized during planning for the implementation and evaluation of projects sponsored by the Smoking, Tobacco, and Cancer Program (STCP) of the National Cancer Institute. The objective of the review was to describe systematically the major past, ongoing, and planned surveys providing estimates of smoking prevalence according to a uniform protocol. The protocol called for collection of data on the content, timeframe, sample, methodology, and mode of information dissemination of surveys conducted by the sponsoring agencies. This report summarizes the results of the review and makes suggestions concerning planning and coordination of future surveys on smoking behavior. The appendix to this report, available from the authors on request, contains the data summary forms, actual survey instruments, and reference lists of publications in which the results of the surveys are reported.

Methods

A data summary form was developed as an aid to the collection and organization of uniform data.

The data were obtained by either a personal interview with an agency contact person or a telephone interview for agencies with headquarters outside of the Washington, DC, metropolitan area. A team of two to three interviewers conducted each interview, using a semistructured interview format. Each interview was approximately 45 minutes to 1 1/2 hours long. Data obtained through the interview were supplemented by copies of publications with information on the survey instruments, methods, history, and results.

On completion of the interviews and initial review of published materials, a draft report was developed and circulated to persons responsible for planning and conducting the surveys. In most cases, they were the original interviewees. They were requested to review the draft report for accuracy and completeness. Their recommended modifications were incorporated into this report.

Results

Eighteen surveys sponsored by seven agencies (four Federal, two voluntary, and one private organization) were identified. (The National Health and Nutrition Examination Survey (NHANES) I and II of the National Center for Health Statistics (NCHS) are counted as separate surveys.) Informa-

tion was collected on two additional studies sponsored by one of the voluntary agencies. The additional studies are (a) the Prospective Smoking Cessation Followup Study of the American Lung Association (ALA), which tracks the success after 1 year of smokers who participated in ALA-sponsored smoking cessation clinics, and (b) the ALA's 5-Year Followup of Smoking Cessation Approaches, which compares long-term smoking cessation success of participants in formal smoking cessation projects with the success of persons using self-help methods to stop smoking. Because these studies did not provide estimates of smoking prevalence, they were omitted from the comparative analysis. Descriptive information about them is included in the appendix available from the authors.

To assess the potential usefulness of the surveys for STCP's planning and evaluation needs, the 18 surveys were reviewed and compared for survey methodology, survey content, and availability of survey data.

A key to the survey abbreviations referred to in this report is given in the box. Table 1 lists the purpose, timeframe, sponsoring agency, and references for each survey.

Survey methodology. Table 2 summarizes the sample design, sample size, and mode of inquiry for each survey. As indicated, the surveys' target populations varied on the basis of age. Two surveys focused on teenagers exclusively (1,2). Five surveys included adults older than age 20 years (references 3-5 and two unpublished reports—Centers for Disease Control: "Adult Use of Tobacco: Methodology," 1975, and American Cancer Society: "Cancer Prevention Study II: Protocol for the American Cancer Society's Study of Lifestyles and Environment"). Five surveys defined adults as 18 years or older (references 6-9 and NCHS's unpublished report, "Data from Wave II of the National Survey of Personal Health Practices and Consequences, United States, 1980," October 1982). The remaining six included teenagers and adults (10-14,A). The majority of surveys used national probability samples that ranged in size from 2,000 to 75,000 persons. The survey of the American Cancer Society (ACS) did not use probability samples, but was based on more than 1 million volunteer participants.

Personal interview was the most frequent mode of inquiry, used by half of the surveys (3,4,7,8,10,11,13,14a,14b). The remaining surveys used telephone interviews or self-administered mail

Key to Smoking Survey Abbreviations

OSH-Adult: Office on Smoking and Health-Adult Use of Tobacco Survey
 OSH-Teenage: Office on Smoking and Health-Teenage Smoking, National Patterns of Cigarette Smoking
 CDC-State: Centers for Disease Control-State-Based Surveys of Risk Factor Prevalence
 NIDA-NSDA: National Institute on Drug Abuse-National Survey on Drug Abuse
 NIDA-Seniors: National Institute on Drug Abuse-National High School Senior Drug Use Survey
 NCHS-NHANES: National Center for Health Statistics-National Health and Nutrition Examination Survey
 NCHS-NHANES Followup: National Center for Health Statistics-National Health and Nutrition Examination Survey I Epidemiologic Followup Study
 NCHS-HISPANIC HANES: National Center for Health Statistics-Hispanic Health and Nutrition Examination Survey
 NCHS-NHIS: National Center for Health Statistics-National Health Interview Survey
 NCHS-Natality: National Center for Health Statistics-National Natality and Fetal Mortality Survey
 NCHS-Family Growth: National Center for Health Statistics-National Survey of Family Growth
 NCHS-NCI-OSH: National Center for Health Statistics, National Cancer Institute, Office on Smoking and Health—Current Population Survey Smoking Supplement
 NCHS-NSPHPC: National Center for Health Statistics-National Survey of Personal Health Practices and Consequences
 NCHS-Long. Health: National Center for Health Statistics-National Longitudinal Health Survey
 ALA-Gallup: American Lung Association-Public Perception of Smoking Prohibition in Public Places (conducted by Gallup Organization)
 ACS-CPS: American Cancer Society-Cancer Prevention Study
 Gallup-Smoking Audit: Gallup Organization-Omnibus Smoking Audit

questionnaires or both methods (references 1,2,5,6,14, and CDC's "Adult Use of Tobacco, Methodology," 1975). In the OSH-Adult survey, the telephone interview was the primary mode of inquiry, and the personal interview was introduced to capture those persons without telephones (CDC unpublished methodology, 1975).

Content. Surveys were assessed for their coverage of information on smoking patterns, the definition of smoking behavior used to determine prevalence, quantification of smoking behavior, age of smok-

Table 1. Overview of smoking surveys reviewed

<i>Title (references)</i>	<i>Purpose</i>	<i>Timeframes covered-anticipated</i>	<i>Sponsoring agency</i>	<i>Comments</i>
Adult Use of Tobacco Survey (CDC unpublished report, 1975).	Provides prevalence and psychosocial data related to smoking behavior of adults (age 21 and older).	1964, 1966, 1970, 1975, 1986	OSH.	Followed up 1964 and 1966 cohorts in 1970 and 1975.
Teenage Smoking—National Patterns of Cigarette Smoking (1).	Provides data on prevalence, onset, and maintenance of smoking in persons ages 12–18.	1968, 1970, 1972, 1974, 1979, 1986	OSH.	Followed up approximately 50 percent of the 1974 cohort in 1979.
State-Based Surveys of Risk Factor Prevalence (6 and CDC unpublished report, Dec. 15, 1983).	Provides comparable data by State on 8 behavioral risk factors for chronic diseases (including smoking).	1981, annually thereafter	CDC.	Data collected monthly beginning in 1984 to provide ongoing surveillance mechanism for State.
National Household Survey on Drug Abuse (10).	Provides prevalence and trend estimates on the use of drugs (including cigarettes) among persons age 12 and older.	1971, 1972, 1974, 1976, 1977, 1979, 1982, 1985. Since 1974, data analyzed by 3 age groups—12–17, 18–25, and 26 and older.	NIDA.	1979 questions on smoking not comparable with other years because a screening question was used in 1979. Question on current smoking was asked only of persons who admitted smoking at least 5 packs of cigarettes in their life.
National High School Senior Drug Use Survey (2).	Provides data on prevalence and trends of various forms of drug use (including cigarettes) and their relationship with psychosocial variables among high school seniors (17–19 years old).	1975, annually thereafter	NIDA.	...
National Health and Nutrition Examination Survey I and II (3,11).	Provides cross-sectional data on defined diseases or conditions of ill health, normative data on health-related parameters, and health-related information that can only be obtained by physical examination and clinical or laboratory tests.	1970–74 (cycle I), 1976–80 (cycle II)	NCHS.	Cycle III planned for 1987–91.
National Health and Nutrition Examination Survey I. Epidemiologic Followup Study (4,14).	Provides longitudinal data on how factors previously measured in earlier survey relate to health conditions that have developed since then.	1982–84	NCHS, National Institute on Aging, and others.	Follows up adult population of NHANES I.
Hispanic Health and Nutrition Examination Survey. (14 and unpublished NHANES Data Collection Forms).	Provides health and nutrition examination data on persons in families having one or more members of Hispanic origin or descent.	1982–84	NCHS.	...
National Health Interview Survey (14,C–E).	Continuous survey that provides data on the incidence of acute illness and accidental injuries, prevalence of chronic conditions and impairments, extent of disability, use of health services, and other health-related topics.	1965, 1966, 1970, 1974, 1976–80, 1983, 1985.	NCHS.	Smoking supplement added only during years indicated; 1983 survey contains information on methods of quitting.

Table 1. Overview of smoking surveys reviewed (continued)

<i>Title (references)</i>	<i>Purpose</i>	<i>Timeframes covered-anticipated</i>	<i>Sponsoring agency</i>	<i>Comments</i>
National Natality and Fetal Mortality Survey (12,14).	Provides national estimates of births by numerous characteristics, including mother's prenatal health practices.	1963-69, 1972, 1980	NCHS.	...
National Survey of Family Growth (14,A).	Provides data on factors influencing trends and differentials in fertility, family planning practices, sources of family planning advice-services, effectiveness and acceptability of family planning methods, and aspects of maternal and child health most directly related to fertility and family planning.	1982-83 (III)	NCHS.	Smoking data were collected only in cycle III.
Current Population Survey Smoking Supplement (7).	Provides data on smoking behavior for purposes of tracking effects of 1964 Surgeon General's Report on Smoking.	1955, 1966-68, 1985	OSH (1985), NCHS (1966-68), NCI (1955).	Conducted by the Census Bureau. The supplements in the indicated timeframes collected data related to smoking. No other health data collected.
National Survey of Personal Health Practices and Consequences (5 and NCHS unpublished report, 1980).	Assesses (a) relationship between longevity and seven personal health practices, (b) relationship between health behavior and illness, and (c) role of variables that may intervene between health practices and health consequences.	1979 (cycle I); 1980 (cycle II)	NCHS.	Same respondents in cycles I and II.
National Longitudinal Health Survey (B).	Provides methodological information on the validity of telephone as inquiry mode for obtaining health data.	1980 (I); 1981 (II)	NCHS.	Same respondents in cycles I and II.
Survey of Public Perception of Smoking Prohibition in Public Places (8).	Provides data to assess the public's attitudes toward prohibiting-restricting smoking in public places.	1983	ALA.	Proprietary survey conducted by Gallup organization.
Cancer Prevention Study I and II (ACS unpublished report).	Provides longitudinal data on the role of environmental factors in the etiology of various types of cancer.	1959-1972 (I); 1982 (II); biannual followup	ACS.	...
Gallup Omnibus Smoking Audit (9).	Provides data on number of smokers and public perceptions and attitudes toward smoking and its health risks.	1977, 1981	Gallup.	Detailed supplement to the frequently conducted omnibus surveys that poll public opinion on political, social, and economic issues.

ing initiation, type and brand of cigarette smoked, and quitting experiences. Highlights of the similarities and differences among the surveys in these areas are summarized in table 1.

Consistency in the definition of smoking behavior is a primary concern when using survey data to

describe trends and when making comparisons among surveys. Ten surveys used the definition of smoking established in 1955 by the National Clearinghouse on Smoking and Health: lifetime consumption of 100 or more cigarettes and currently smoking (references 1,3,4-7,13,B, and

Table 2. Content and methods of surveys on smoking

Survey	Definition of smoker	Method of quantifying cigarettes	Age, years	Age at initiation	Quitting attempts	Cigarette brand and type	Sample design	Sample size	Primary inquiry mode
OSH-Adult	≥ 100 cigarettes and current use	No. smoked	12 or older	Yes	Detailed information	Both	National probability	12,029	Telephone
OSH-Teenage	do.	do.	12-18	do.	do.	do.	Stratified probability	2,639-10,000	Telephone
CDC-State	do.	do.	18 or older	Yes	Ever attempted?	No	Multistage cluster	22,258	Telephone
NIDA-NSDA,	1979 only; ≥ 100 cigarettes plus only smoking in past 30 days; other years: any smoking in past 30 days	Fixed intervals given	12 and older	Yes	No	No	National probability	3,200-8,000	Personal interview
NIDA-Seniors	Any smoking in past 30 days	do.	17-19	Yes (grade)	No	No	National 3-stage sampling	16,000	Questionnaire
NCHS-NHANES I	> 100 cigarettes plus current use	No. smoked	12 and older	Yes	No	No	Multistage clustered probability	21,000	Personal interview and examination
NCHS-NHANES II.	do.	do.	do.	do.	do.	do.	do.	do.	Do.
NCHS-NHANES I Followup	do.	≥ 100 cigarettes plus current use and heaviest smoked ever	35-85	do.	Detailed	Type only	National probability	14,000	Personal interview
NCHS-Hispanic NHANES	do.	do.	12 or older	do.	No	Both	do.	12,000	Personal interview and examination
NCHS-NHIS	do.	No. smoked	17 or older; varies by year	do.	Detailed; varies by year	1978-80 both	do.	12,000-75,000	Personal interview
NCHS-Natality	Any smoking 12 months before delivery	do.	All mothers	No	No	Both	do.	6,400	Mail questionnaire
NCHS-Family Growth	Any smoking during pregnancy	Fixed intervals given	15 or older	No	No	No	Multistage area	9,797	Personal interview
NCHS-NCI-OSH-CPS	> 100 cigarettes plus current use	No. smoked	17 or older	Yes	No	Type only	National probability	45,000-75,000	Personal interview
NCHS-NSPHPC	do.	do.	20-64	No	Ever attempted?	No	do.	2,453-3,025	Telephone
NCHS-Long. Health	do.	do.	18 or older	Yes	Detailed	Both	do.	9,000	Telephone
ALA-Gallup	"Regular smoker"	No. smoked	Adults; 18 or older	No	No	No	do.	1,509	Personal interview
ACS-CPS I and II	1 cigarette or more per day for 1 year	No. smoked + heaviest ever	30 or older	No	No	Both	Volunteers	> 1 million	Questionnaire
Gallup-Smoking Audit	Any smoking in previous week	No. smoked	18 or older	No	Ever attempted?	No	National probability	1,500	Telephone

NCHS's 1980 National Survey of Personal Health Practices and Consequences); the remaining surveys used other definitions (references 2,8-10,12, and the ACS survey). For example, the National

Natality and Fetal Mortality Survey defined any mother as smoking if she smoked at all during the year prior to delivery (12). In the surveys of the National Institute on Drug Abuse (NIDA) (2,10),

Table 3. Coverage of special issues by surveys

Survey	Smokeless tobacco	Passive smoking ¹	Low tar ²	Women ³	Hispanics ³	Blacks ³	Youth ⁴	Regulation ⁵	Pregnancy
OSH-Adult	X	X	X	X		X		X	X
OSH-Teenage			X	X		X	X		
CDC-State				X	X	X			X
NIDA-NSDA				X	⁶ X	⁶ X	X		
NIDA-Seniors				X			X		
NCHS-NHANES I	X			X		X	X		
NCHS-NHANES II				X		X	X		
NCHS-NHANES I Followup	X			X		X			
NCHS-Hispanic HANES		X	X	X	X		X		
NCHS-NHIS		X	X	X	X	X	X		
NCHS-NCI-OSH-CPS	X			X		X	X		
NCHS-Natality			X	X	X	X	X		X
NCHS-Family Growth				X	X	X	X		X
NCHS-NSPHPC				X		X			
NCHS-Long. Health			X	X	X	X			
ALA-Gallup		X		X				X	
ACS-CPS I and II	X	X	X	X		X			X
Gallup-Smoking Audit				X		⁷ X		X	

¹ Includes perception of exposure to smoking of others or health effects or both.

² As determined from brand information.

³ The large sample size involved is presumed adequate for stratification by race or sex.

⁴ Under age 18.

⁵ Attitudes towards restriction of smoking in public places.

⁶ 1985 survey only.

⁷ Racial breakdown is white or nonwhite.

information on several types of drug abuse behaviors using comparable definitions of use for each was collected. The NIDA surveys defined a current smoker as one who had smoked within the past 30 days. Lifetime prevalence rates, however, are available for all NIDA surveys since 1974.

The surveys further differed in quantification of smoking behavior. All 18 surveys included some information on the number of cigarettes smoked. Fifteen surveys used an open-ended question format to elicit this information, asking how many cigarettes were smoked, while the remaining surveys (2,10,A) used fixed intervals of packs smoked per day.

Because of increasing concern about the effects of changing cigarette products on smoking behavior, it was of interest to assess whether surveys included information about the type of cigarette smoked. Such information could include both the type of cigarette (filter, packs, size, menthol) and brand. Nine surveys, sponsored by the Office on Smoking and Health (OSH), NCHS, and ACS, collected information of this type (references 3,7,11,13,B,D, and CDC unpublished questionnaires, 1975).

Information concerning smoking cessation was rather limited. Nine surveys reviewed collected no information about quitting experiences. Of the nine that did, three indicated only whether subjects had ever attempted to quit (references 5-9 and two unpublished reports: "Behavioral Risk Factor Sur-

veillance System Data Collection Instrument," CDC, December 15, 1983 and NCHS's National Survey of Personal Health Practices and Consequences, 1980), and the remaining six (all sponsored by OSH and NCHS) collected detailed information concerning quitting attempts (references 1,4,B,C,E, and CDC unpublished questionnaire, 1975). For example, the OSH surveys included the number of quitting attempts, time of the last attempt, abstinence duration, and changes in brand and number of cigarettes smoked (reference 1 and CDC unpublished questionnaires, 1975). Although specific information varied from year to year, the NCHS-sponsored surveys (primarily the National Health Interview Survey (NHIS) and NHANES) collectively captured such information as duration of cessation, reasons for quitting, attempts to quit, and methods of quitting (4,B-D).

Also assessed was the surveys' coverage of several issues that were relevant to the STCP's intervention research planning efforts. These issues include smokeless tobacco use, passive smoking and its effects, use of low tar and low nicotine cigarettes, smoking behavior in special populations (women, youth, Hispanics, and blacks), regulatory measures to control smoking, and pregnancy and smoking. Table 3 summarizes the surveys' coverage of these areas.

Use of smokeless tobacco was covered by five surveys: OSH-Adult (CDC unpublished questionnaires, 1975), NCHS-NHANES I (3), NCHS-

... there is considerable variability in the content and methodologies of the surveys. Better comparability and coordination among the surveys are needed in such areas as sampling methods, definition of target population, timing of surveys, definition of smoking behavior used to determine prevalence, and quantification of smoking behavior.'

NHANES I Followup (4), NCHS-CPS (7), and the ACS's Cancer Prevention Study (CPS) II (ACS unpublished report). With the exception of the ACS-CPS II, these questions were limited to whether the respondent had ever used snuff or chewing tobacco and whether these products were currently used or both. The ACS-CPS II sought additional details such as age when first used, frequency of use, and duration of use.

Passive smoking was addressed by five surveys: OSH-Adult (CDC unpublished questionnaires, 1975); 1970 and earlier NCHS-NHIS, (according to Ronald Wilson, NCHS, personal communication, February 17, 1984); NCHS-Hispanic Health and Nutrition Examination Survey (HANES) (13); ALA-Gallup (8); and ACS-CPS II (ACS, unpublished report). These surveys contained questions on the amount of exposure to secondary smoke or the perceived health effects of such exposure or both.

The use of low tar and low nicotine cigarettes was covered by seven of the surveys (references 1,13,B-D, and CDC unpublished questionnaires, 1975, and ACS unpublished report). This information can be derived from questions on the brand of cigarettes smoked.

All surveys had a sufficiently large sample to permit stratification by gender and were considered relevant to women's smoking issues. Five surveys—OSH-Adult (CDC unpublished methodology, 1975), CDC-State (CDC unpublished report, December 15, 1983), NCHS-Natality (12), NCHS-Family Growth (14a), and ACS-CPS II (ACS unpublished report)—also included informa-

tion on smoking behavior in relation to pregnancy and reproductive history.

Relevance to minority issues was determined on the basis of sample size and inclusion of questions on ethnicity. Fourteen of the 18 surveys included questions on ethnicity and were considered to have a sufficiently large sample of blacks to permit generalizations about smoking behavior in the black population (references 1,3-7,9-11,14b,B,C, and CDC unpublished methodology, 1975, and ACS unpublished report). The six surveys considered useful for smoking information on Hispanics were CDC-State (6); NCHS-Hispanic HANES, which covers Hispanics exclusively (13); NCHS-NHIS from 1976 on (C); NCHS-Natality (12); NCHS-Family Growth (14a); and NCHS-Longitudinal Health (B).

Coverage of youth was based on the inclusion of persons under 18 in the study sample. As table 2 indicates, nine surveys met this criterion (references 1-3,7,11,13,14a,14b,A, and Ronald Wilson, personal communication, February 17, 1984).

Only the OSH-Adult (CDC unpublished questionnaire, 1975), ALA-Gallup (8), and Gallup Smoking Audit (9) surveys addressed the regulatory issue by including information concerning the survey population's attitudes toward restricting smoking in public places.

Data availability. All of the surveys have a formal means of reporting and disseminating their results, which includes periodic or one-time publications. In addition, for the following surveys, access to public use tapes is provided for certain years, permitting users to conduct analyses beyond those presented in the publications: OSH-Adult, OSH-Teenage, CDC-State, NIDA-NSDA, NIDA-Seniors, NCHS-NHIS, NCHS-NHANES, and NCHS-Natality. The appendix to our report, which is available on request, contains lists of publications by survey in which key survey characteristics, methodology, and results are reported.

In addition to providing access to data tapes, a few of the sponsoring agencies (for example, CDC, OSH, and NCHS) will conduct special analyses for the user on request as agency resources permit. Several sponsoring agencies may consider the inclusion of additional questions in their surveys to meet particular data needs of other agencies. However, an agency's success in adding questions to a survey may be constrained by several factors:

- Survey length—Clearance for federally sponsored surveys, required by the Office of Manage-

ment and Budget, may be jeopardized if additional questions considerably lengthen the survey instrument and increase potential data collection burden on respondents.

- Survey planning lead time—The content of most of the surveys (particularly those sponsored by NCHS) is determined well in advance (in many cases 2 years before implementation). The feasibility of including additional survey questions must consider planning lead time.

- Costs—Many of the surveys for which add-on possibilities exist require a fee for the inclusion of a limited number of additional questions (for example, NCHS, CDC-State, and Gallup surveys).

Recommendations

Our recommendations address two areas of concern: the availability and comparability of survey data.

Given the fast pace of changing tobacco use trends, one area of concern relates to the timeliness of survey results. Current data are needed to plan and target appropriate smoking control interventions. Although the availability of survey data for recent years appears greater (see box), there is a 1- to 2-year lag between data collection and publication of survey data or release of data tapes.

As previously indicated, there is considerable variability in the content and methodologies of the surveys. Better comparability and coordination among the surveys are needed in such areas as sampling methods, definition of target population, timing of surveys, definition of smoking behavior used to determine prevalence, and quantification of smoking behavior.

To address these concerns, the following recommendations are made:

- Establish a mechanism for coordinating the planning and timing of key national surveys and for reporting and disseminating the results of these surveys in a more timely fashion,
- Strengthen OSH's resources to act as a central location for maintaining and disseminating information regarding all national surveys on smoking,
- Conduct an indepth analysis of the major surveys on smoking to determine comparability in sampling, question format, and resulting data,
- Create a mechanism whereby the major survey agencies can reach a consensus on standardization of sampling methodology, smoking-related questionnaire items, and data analysis and reporting.

Timeframes Covered and Anticipated by Surveys on Smoking

OSH-Adult: 1964, 1966, 1970, 1975, 1986.
OSH-Teenage: 1968, 1970, 1972, 1974, 1979, 1985.
CDC-State: 1981-86.
NIDA-NSDA: 1971, 1972, 1974, 1976, 1977, 1979, 1982, 1985.
NIDA-Seniors: 1975-86.
NCHS-NHANES I: 1971, 1972, 1973, 1974, 1975.
NCHS-NHANES II: 1976-80.
NCHS-NHANES I Followup: 1982-84.
NCHS-Hispanic HANES: 1982-84.
NCHS-NHIS: 1965, 1966, 1970, 1974, 1976-80.
NCHS-Natality: 1967, 1968, 1969, 1980.
NCHS-Family Growth: 1982, 1983.
NCHS-NCI-OSH-CPS: 1955, 1966-68, 1985.
NCHS-NSPHPC: 1979, 1980.
NCHS-Long. Health: 1980, 1981.
ALA-Gallup: 1983.
ACS-CPS I and II: 1959, 1964-72, 1982, 1984.
Gallup-Smoking Audit: 1977, 1981.

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Reported Vague Symptoms and At-Risk Status: the Case of Polyvinyl Chloride Workers in Louisville

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Synopsis.....

This study concerns the frequency of visits to the dispensary by workers with vague symptoms of physical illness at a polyvinyl chloride plant in

Louisville, KY, where an outbreak of hepatic angiosarcoma occurred. The illness behavior of three cohorts of workers at three levels of risk—workers removed from the chemical plant to a pallet plant (PP) because their screening results indicated liver abnormalities; workers who had some positive test results (TP); and workers whose test results were negative (TN)—was studied before (time 1) and after (time 2) the angiosarcoma crisis. It was predicted that, during time 2, the groups' visits to the dispensary would increase in relation to their levels of risk (PP>TP>TN). Although there was an overall increase in the percentage of visits because of vague symptoms during time 2, the only cohort with different behavior was the group of TP workers: they reduced their use of the dispensary.

These results are similar to those in a previous study in which all symptoms of illness were included. It is speculated that social and individual factors, as well as the labeling phenomenon, explain the results. Health care providers are encouraged to follow up with workers at risk who seem to avoid monitoring their health.

THE PRESENTATION OF COMPLAINTS of physical distress at a medical service is related to many factors besides physical illness. Illness behavior, "any activity, undertaken by a person who feels ill, to define the state of his health and to discover a suitable remedy," (1) is known to be associated with social class, ethnicity, education, sex, and age

(2-6). Situational variables, such as the attitudes of the family and physician, influence a person's desire to seek alleviation from discomfort or to remain sick (7). Distress and the "inclination to adopt the sick role" increase the frequency of illness behavior (8,9).

Parsons developed the concept of the sick role